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Docket No.: VRT0125US

February 22, 2007

MAIL STOP APPEAL BRIEF-PATENTS
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Alexandria, VA 22313-1450

| | | | | |
|---|---|---|---|---|
| Re: | Applicant(s): | Chirag Deepak Dalal; Vaijayanti Rakshit Bharadwaj | | |
| | Assignee: | VERITAS Operating Corporation | | |
| | Title: | IDENTIFICATION OF STORAGE TO ACQUIRE TO MAINTAIN THE INTENT OF LOGICAL VOLUMES | | |
| | Serial No.: | 10/812,322 | | |
| | Examiner: | Thanh Duc Vo | Filed: | March 29, 2004 |
| | Docket No.: | VRT0125US | Group Art Unit: | 2189 |

Dear Sir:

Transmitted herewith are the following documents in the above-identified application:

(1) This Transmittal Letter (1 page) *(in duplicate)*; and
(2) Appeal Brief (16 pages).

☐ No additional fee is required.
☒ The fee has been calculated as shown below:

**CLAIMS AS AMENDED**

| | Claims Remaining *After* Amendment | | Highest No. Previously Paid For | | Present Extra | | Rate | | Additional Fee |
|---|---|---|---|---|---|---|---|---|---|
| Total Claims | 23 | Minus | 23 | = | 0 | x | $ 50.00 | $ | 0.00 |
| Independent Claims | 3 | Minus | 3 | = | 0 | x | $200.00 | $ | 0.00 |
| ☐ Fee of ____ for the first filing of one or more multiple dependent claims per application | | | | | | | | $ | |
| ☒ Fee for Appeal Brief | | | | | | | | $ | 500.00 |
| **Total additional fee for this Amendment:** | | | | | | | | $ | 500.00 |

☒ Conditional Petition for Extension of Time: If an extension of time is required for timely filing of the enclosed document(s) after all papers filed with this transmittal have been considered, an extension of time is hereby requested.

☒ Please charge our Deposit Account No. 502306 in the amount of $ 500.00

☒ Also, charge any additional fees required and credit any overpayment to our Deposit Account No. 502306.

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Attorney for Applicant(s) — Date of Signature: 2/22/07

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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|---|---|---|---|
| Applicant(s): | Chirag Deepak Dalal; Vaijayanti Rakshit Bharadwaj | | |
| Assignee: | VERITAS Operating Corporation | | |
| Title: | Identification Of Storage To Acquire To Maintain The Intent Of Logical Volumes | | |
| Serial No.: | 10/812,322 | Filing Date: | March 29, 2004 |
| Examiner: | Than Duc Vo | Group Art Unit: | 2189 |
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Austin, Texas
February 22, 2007

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Commissioner for Patents
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Alexandria, VA 22313-1450

# APPEAL BRIEF UNDER 37 CFR § 41.37

Dear Sir:

This brief is submitted in support of the appeal filed December 4, 2006 by the appellants to the Board of Patent Appeals and Interferences from the Examiner's final rejection of claims 1-27. The appellants received a Notice of Panel Decision from Pre-Appeal Brief Review setting the period for filing this appeal brief to expire February 22, 2007.

Please charge deposit account No. 502306 for the fee of $500.00 associated with this appeal brief. Please charge this deposit account for any additional sums which may be required to be paid as part of this appeal.

## REAL PARTY IN INTEREST

The real party in interest on this appeal is Veritas Operating Corporation.

## RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

## STATUS OF CLAIMS

Claims 1-9 and 13-27 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Soejima et al., U.S. Patent Application Publication 2003/0074528 (Soejima). Claims 10-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Soejima in view of purported Applicant Admitted Prior Art. Claims 1-27 are being appealed.

## STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection of October 2, 2006.

## SUMMARY OF CLAIMED SUBJECT MATTER

The invention is as set forth in the claims. To summarize the invention without intending to limit or otherwise affect the scope of the claims, the invention as set forth by independent claim 1 relates to a method. A first specification for a first set of needed storage regions is determined. The first set of needed storage regions is needed to perform an operation on a logical volume, and the first set of needed storage regions satisfies an intent of the logical volume. See, e.g., **Figure 5, 510-514**, and paragraphs **0049-0050**. A plurality of existing storage regions is searched for a corresponding existing storage region for each needed storage region in the first set of needed storage regions. See, e.g., **Figure 5, 516**, and paragraphs **0051-0052**. If no existing storage region is found corresponding to a first needed storage region in the first set of needed storage regions, a second specification for a second set of storage regions to be acquired is determined. See, e.g., **Figure 5, 518-522**, and paragraphs **0052-0055.**

The invention as set forth by independent claims 13 and 18 relates to systems describing various means and modules. A first determining means or module (e.g., the various hardware and software disclosed in paragraphs **0064-0066**) determines a first specification for a first set of needed storage regions. The first set of needed storage regions is needed to perform an operation on a logical volume, and the first set of needed storage regions satisfies an intent of the logical volume. See, e.g., **Figure 5, 510-514**, and paragraphs **0049-0050**. A searching means or module (**0064-0066**) searches a plurality of existing storage regions for a corresponding existing storage region for each needed storage region in the first set of needed storage regions. See, e.g., **Figure 5, 516**,

and paragraphs **0051-0052**. A second determining means or module (**0064-0066**) determines a second specification for a second set of storage regions to be acquired if no existing storage region is found corresponding to a first needed storage region in the first set of needed storage regions. See, e.g., **Figure 5**, **518-522**, and paragraphs **0052-0055**.

Similarly, **Figure 5**, paragraphs **0049-0055**, and paragraphs **0064-0066** describe the computer-readable medium of claim 23.

## GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Claims 1-9 and 13-27 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Soejima et al., U.S. Patent Application Publication 2003/0074528 (Soejima).

## ARGUMENT

Claims 1-9 and 13-27 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Soejima et al., U.S. Patent Application Publication 2003/0074528 (Soejima). Claims 10-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Soejima in view of purported Applicant Admitted Prior Art. The appellants present an argument with respect to independent claim 1, as independent claims 13, 18, and 23 generally require the same disputed limitations of claim 1, and claims 2-12, 14-17, 19-22, and 24-27 depend from respective independent claims.

Soejima neither teaches nor suggests a method comprising:

> determining a first specification for a first set of needed storage regions, wherein the first set of needed storage regions is needed to perform an operation on a logical volume, and the first set of needed storage regions satisfies an intent of the logical volume;
>
> searching a plurality of existing storage regions for a corresponding existing storage region for each needed storage region in the first set of needed storage regions; and
>
> if no existing storage region is found corresponding to a first needed storage region in the first set of needed storage regions, determining a second specification for a second set of storage regions to be acquired,

as required by independent claim 1 and generally required by independent claims 13, 18, and 23.

Regarding the claimed "determining a first specification . . .", the Examiner refers (Final Office Action of October 2, 2006 ("FOA") p. 3, ¶1) to paragraphs 0017-0019 of Soejima which state:

> In accordance with an aspect of the present invention, there is provided a volume management method for setting at least a logical volume over a plurality of physical storage devices, said volume management method comprising the steps of:
>
> receiving a volume creation request specifying information on a requested storage capacity and information on requested average performance;
>
> forming a judgment as to whether or not there exists an unoccupied area satisfying the requested storage capacity throughout the storage devices.

In particular, the Examiner appears to equate Soejima's volume creation request with the claimed "first specification for a first set of needed storage regions." The appellants respectfully disagree. While Soejima's volume creation request may include information about storage capacity and average performance, there is nothing in the cited portion of Soejima teaching or suggesting that the request include *a specification of a set of needed storage regions*. Similarly, because Soejima is silent as to the first set of needed storage regions, there is no teaching or suggestion that the storage regions are needed to perform an operation on a logical volume. The Examiner references paragraph 0017 (e.g., "setting at least a logical volume over a plurality of physical storage devices"), but this fails to teach *storage regions needed for the performance of an operation on an existing volume*, and particularly that Soejima's request, i.e., that which the Examiner equates with the claimed first specification, includes such a set of needed storage regions.

As to the claimed intent for which the first set of needed storage regions are needed, the Examiner alludes to paragraph 0019. However, this paragraph simply recites "forming a judgment as to whether or not there exists an unoccupied area satisfying the requested storage capacity throughout the storage devices." Thus, there is no teaching or suggestion of an *intent of the logical volume*. Finally, the referenced portion of Soejima fails to teach or suggest anything corresponding to the operation of determining.

In response to similar arguments, the Examiner states:

> . . . Applicant acknowledges that Soejima's volume creation request may include information about storage capacity and average performance . . . . In addition, Soejima et al., clearly discloses such teaching on page 2, paragraph [0018]. (FOA, p. 7, ¶7)

The Examiner's response simply reiterates the rejection and fails to address the appellants' arguments including, for example, that information about storage capacity and average performance is not "a specification of a set of needed storage regions."

Regarding the claim requirement that "the first set of needed storage regions is needed to perform an operation on a logical volume," the Examiner responds:

> . . . the physical devices are the physical volume being used to create the logical volume as later clarified on paragraph 0018. (FOA, p. 8, ¶1)

Again, the Examiner ignores the claim limitation in full context, i.e., a first specification is determined, the first specification is for a first set of needed storage regions, and, *inter alia*, the first set is needed to *perform an operation on a logical volume*. The mere fact physical devices are used to create a logical volume (as purportedly taught by Soejima), does not teach or suggest the detailed requirements of the first specification.

Regarding the claim requirement that "the first set of needed storage regions satisfies an intent of the logical volume," the Examiner responds:

> . . . the intent is to use the unoccupied area of physical storage devices . . . . (FOA, p. 8, ¶2)

Here, the Examiner has not identified an intent of the logical volume in Soejima, but rather identified some highly general purpose that is *not* articulated in Soejima. Whether or not the Examiner's characterization of Soejima is correct, this is not what the appellant's specification defines "intent" to be. See, for example, paragraphs 0023-0029.

Regarding the claimed searching operation, the Examiner refers to paragraphs 0022 and 0024 of Soejima (FOA, p. 3, ¶2), which state:

> In accordance with another aspect of the present invention, there is provided a volume management method for searching a storage apparatus comprising a plurality of physical storage devices, on which at least one logical volume is set, for an unoccupied area used by a new volume over some of said physical storage devices, said volume management method comprising the steps of:
>
> . . . forming a judgment as to whether or not all volumes, which include existing volumes and the new volume supposed to be added to the existing volumes, each satisfy its requested average performance by referring to information of requested average performance on a storage means for each of the existing volumes which share any of the storage device with an unoccupied area; and

While Soejima teaches searching a storage apparatus for an unoccupied area used by a new volume, the reference fails to teach or suggest searching existing storage regions for *a corresponding existing storage region* for *each needed storage region in the first set.* As noted in paragraph 0024 of Soejima, the search is used to form a judgment as to whether or not *all* volumes satisfy a requested average performance. Again, the

Examiner appears to equate the claimed "first set of needed storage regions" with the information in Soejima's "request," i.e., information about storage capacity and average performance. Neither paragraph 0022 nor 0024 teach or suggest searching for existing storage regions corresponding to Soejima's information about storage capacity or average performance. The Examiner's response to arguments in this regard (FOA, p. 8, ¶3) provides no further clarification of the Examiner's position.

Regarding the claimed determining a second specification, the Examiner refers generally to alternate plan execution as described in Figures 4 and 6. However, the referenced alternate plans simply do not teach or suggest determining a second specification for *a second set of storage regions to be acquired* if no existing storage region is found corresponding to the first needed storage region.

Finally, the appellants note MPEP §2131 makes clear the requirements for anticipation:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). . . . "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). (Emphasis added)

Thus, in addition to showing every element, the reference must teach their arrangement as required by the claim. As described above, Soejima does not teach or suggest all of the claim limitations, and those elements of Soejima identified by the Examiner as corresponding to appellants' claim limitations are not arranged in a manner corresponding to the appellants' claims.

Accordingly, the appellants respectfully submit that independent claims 1, 13, 18, and 23 are allowable over Soejima. Claims 2-12, 14-17, 19-22, and 24-27 depend from independent claims 1, 13, 18, and 23, and are allowable for at least this reason.

## CONCLUSION

The appellants respectfully submit that claims 1-27 are allowable over the cited art. For at least the reasons stated above, claims 1-27 are allowable. The appellants respectfully request that the Board reverse the rejections of these claims.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on February 22, 2007.

Attorney for Appellant(s) — Date of Signature: 2/22/07

Respectfully submitted,

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## CLAIMS APPENDIX

1. A method comprising:

determining a first specification for a first set of needed storage regions, wherein the first set of needed storage regions is needed to perform an operation on a logical volume, and the first set of needed storage regions satisfies an intent of the logical volume;

searching a plurality of existing storage regions for a corresponding existing storage region for each needed storage region in the first set of needed storage regions; and

if no existing storage region is found corresponding to a first needed storage region in the first set of needed storage regions, determining a second specification for a second set of storage regions to be acquired.

2. The method of claim 1 wherein the second set of storage regions to be acquired comprises at least the first needed storage region.

3. The method of claim 2 wherein the second specification for the second set of storage regions to be acquired comprises an attribute of the first needed storage region, and a connection between the first needed storage region and a storage object in the logical volume.

4. The method of claim 1 further comprising:

using the second specification to acquire a third set of storage regions.

5. The method of claim 4 wherein

the third set of storage regions is a subset of the second set of storage regions.

6. The method of claim 1 further comprising:

acquiring the second set of storage regions; and

performing the operation on the logical volume using the second set of storage regions to be acquired.

7. The method of claim 1 wherein the second set of storage regions to be acquired satisfies the intent of the logical volume.

8. The method of claim 1 further comprising:

determining a third specification, wherein the determining the third specification comprises specifying an existing storage region of the plurality of existing storage regions to reserve for performing the operation.

9. The method of claim 1 wherein the second set of storage regions to be acquired excludes a second needed storage region for which an existing storage region of the plurality of existing storage regions is found.

10. The method of claim 1 wherein

the operation comprises increasing a size of the logical volume.

11. The method of claim 1 wherein

the operation comprises evacuating data from the logical volume.

12. The method of claim 1 wherein

the operation comprises relocating data of the logical volume.

13. A system comprising:

first determining means for determining a first specification for a first set of needed storage regions, wherein the first set of needed storage regions is needed to perform an operation on a logical volume, and the first set of needed storage regions satisfies an intent of the logical volume;

searching means for searching a plurality of existing storage regions for a corresponding existing storage region for each needed storage region in the first set of needed storage regions; and

second determining means for determining a second specification for a second set of storage regions to be acquired if no existing storage region is found

corresponding to a first needed storage region in the first set of needed storage regions.

14. The system of claim 13 further comprising:

using means for using the second specification to acquire a third set of storage regions.

15. The system of claim 14 wherein the third set of storage regions is a subset of the second set of storage regions to be acquired.

16. The system of claim 13 further comprising:

acquiring means for acquiring the second set of storage regions to be acquired; and

performing means for performing the operation on the logical volume using the second set of storage regions to be acquired.

17. The system of claim 13 further comprising:

third determining means for determining a third specification, wherein the determining the third specification comprises specifying an existing storage region of the plurality of existing storage regions to reserve for performing the operation.

18. A system comprising:

a first determining module configured to determine a first specification for a first set of needed storage regions, wherein the first set of needed storage regions is needed to perform an operation on a logical volume, and the first set of needed storage regions satisfies an intent of the logical volume;

a searching module configured to search a plurality of existing storage regions for a corresponding existing storage region for each needed storage region in the first set of storage regions; and

a second determining module configured to determine a second specification for a second set of storage regions to be acquired if no existing storage region is

found corresponding to a first needed storage region in the first set of needed storage regions.

19. The system of claim 18 wherein the second set of storage regions to be acquired comprises at least the first needed storage region.

20. The system of claim 18 wherein the second specification for the second set of storage regions to be acquired comprises

an attribute of the first needed storage region, and

a connection between the first needed storage region and a storage object in the logical volume.

21. The system of claim 18 further comprising:

an acquiring module configured to acquire the second set of storage regions to be acquired; and

a performing module configured to perform the operation on the logical volume using the second set of storage regions to be acquired.

22. The system of claim 18 further comprising:

a third determining module configured to determine a third specification, wherein the determining the third specification comprises specifying an existing storage region of the plurality of existing storage regions to reserve for performing the operation.

23. A computer-readable medium comprising:

first determining instructions configured to determine a first specification for a first set of needed storage regions, wherein

the first set of needed storage regions is needed to perform an operation on a logical volume, and

the first set of needed storage regions satisfies an intent of the logical volume;

searching instructions configured to search a plurality of existing storage regions for a corresponding existing storage region for each needed storage region in the first set of needed storage regions; and

second determining instructions configured to determine a second specification for a second set of storage regions to be acquired if no existing storage region is found corresponding to a first needed storage region in the first set of needed storage regions.

24. The computer-readable medium of claim 23 wherein the second set of storage regions to be acquired comprises at least the first needed storage region.

25. The computer-readable medium of claim 23 wherein the second specification for the second set of storage regions to be acquired comprises

an attribute of the first needed storage region, and

a connection between the first needed storage region and a storage object in the logical volume.

26. The computer-readable medium of claim 23 further comprising:

acquiring instructions configured to acquire the second set of storage regions to be acquired; and

performing instructions configured to perform the operation on the logical volume using the second set of storage regions to be acquired.

27. The computer-readable medium of claim 23 further comprising:

third determining instructions configured to determine a third specification, wherein the determining the third specification comprises specifying an existing storage region of the plurality of existing storage regions to reserve for performing the operation.

## EVIDENCE APPENDIX

None.

## RELATED PROCEEDINGS APPENDIX

None.